

STAINLESS WORM & HELICAL BEVEL GEARBOXES

DESIGNED FOR DEMANDING ENVIRONMENTS



STAINLESS STEEL WORM GEARS

To complement the **MARLIN** Stainless motor range we also offer high quality, European-manufactured stainless steel gearboxes. The series is developed specifically for the food and pharmaceutical industries which make heavy demands on machinery and therefore require an easy to clean design.

The Stainless steel gears are designed with a smooth housing and hollow shaft. They are lubricated for life and can also be supplied with a lubricant approved for the food industry. Oil seals are made of nitrile rubber as standard with other materials available for specific applications.

In order to reduce the risk of bacteria growth, this design features smooth surfaces without unnecessary flanges, recesses or mounting holes. It is also possible to supply the gears with torque arms, output flanges and various combinations of hollow-worm or solid-worm through shafts. *Other adaptations available.*

The gearboxes can be supplied either stand alone or as a complete sanitary gear motor with a **MARLIN** Stainless AC motor.

The protection of the gearbox is IP65. To achieve an overall protection of IP66 they need to be assembled to a motor using a genuine **MARLIN** gasket.

The motor-gearboxes are suitable for mounting without additional stainless safety covers in areas where hygiene requirements are high. Hidden sources of contamination are therefore avoided.

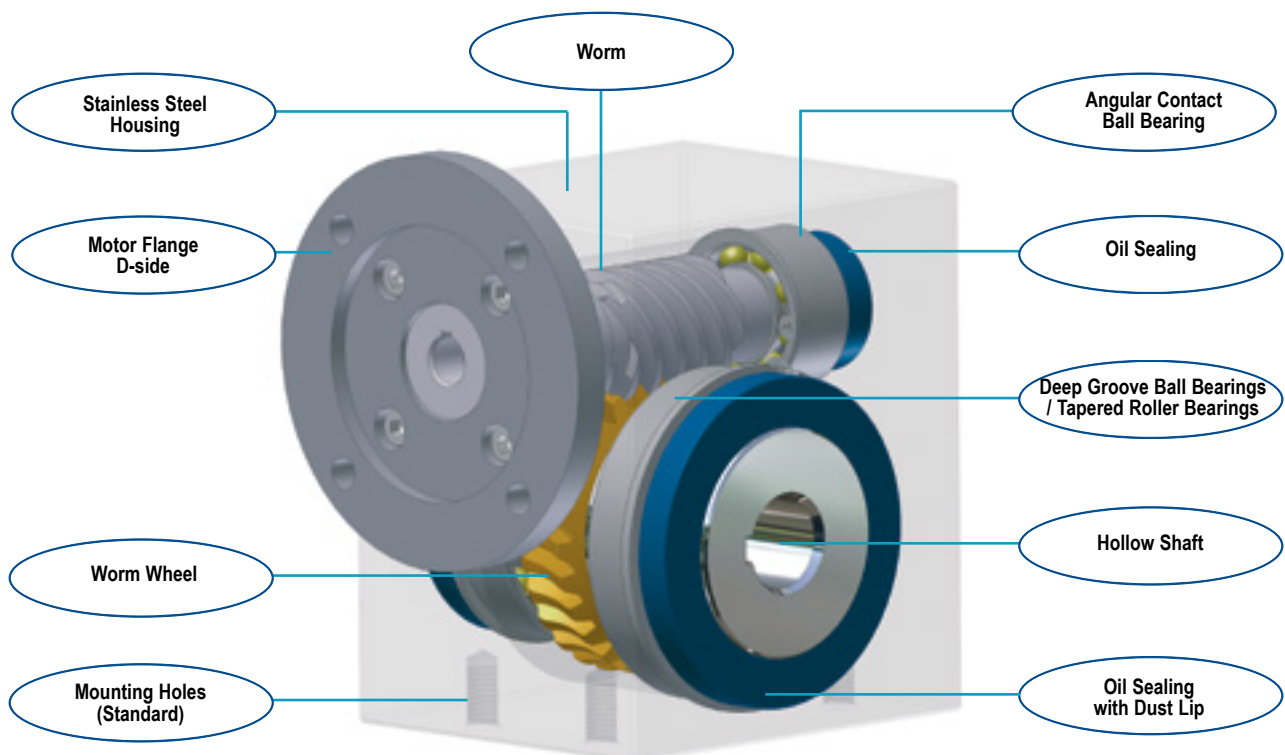
The gearboxes are supplied with a centre distance of 31, 42, 61, 79 or 99 mm. The gear ratios range from 5:1 to 75:1 with an output torque up to approx. 900 Nm. See further specifications on the following pages.

You are welcome to contact our specialists who can discuss in detail your specific requirements and give more information on our complete product profile.

TYPE DESIGNATION



In order to generate an unambiguous type designation of the stainless steel gearbox, the figure **1** of the example above indicates that it is a worm gear. The figure **42** indicates the centre distance and thus the gear size (available in 31, 42, 61, 79 and 99). The figure **4** indicates that it is a stainless steel gearbox. The other figures are further explained on the following pages.



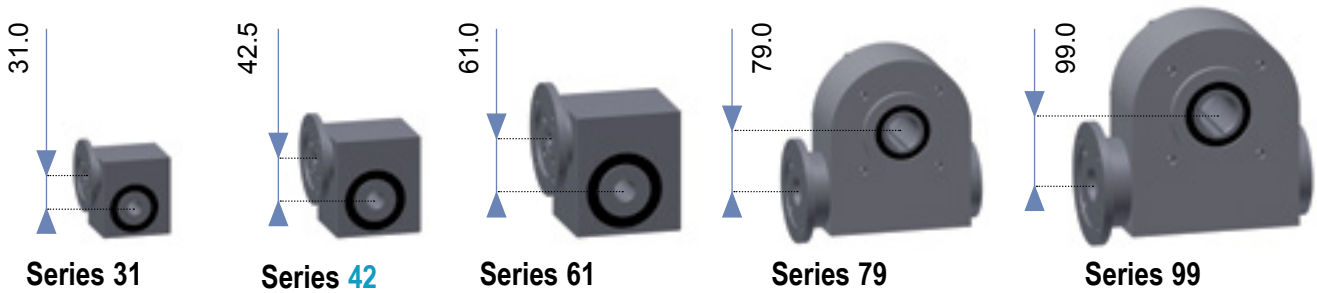


SELECTION GUIDE

1 42 4 0 411 12 02 01 30 0 1

Stainless Steel Worm Gearbox Sizes

The stainless steel worm gearboxes are standardly made in 5 sizes with housings made of stainless steel.



Gear Ratios

Stainless steel worm gearboxes are as standard available with the following nominal gear ratios:

For exact values, see tables of effects on page 4, 5 and 6. *Other gear ratios on request.*

Series 31 and 42 only

| No. | 07 | 10 | 15 | 20 | 30 | 40 | 50 | 60 | 05 | 25 | 75 |
|------------|-----------------|------|------|-----------|------|----------------|-----------|-----------|-----------|------|------|
| Gear Ratio | 7 / 7.3 / 7.5:1 | 10:1 | 15:1 | 20 / 21:1 | 30:1 | 38 / 40 / 42:1 | 48 / 50:1 | 60 / 62:1 | 5 / 5.4:1 | 25:1 | 75:1 |



SERVICE FACTOR

The operating conditions are of importance to the durability of the gearbox. The gearbox should therefore be dimensioned by using the service factors mentioned below. Please note that the values apply for operation with an AC standard motor.

$$\text{Service Factor} = \frac{M_{\text{gear}} \text{ [Nm]}}{M_{\text{required}} \text{ [Nm]}}$$

| Type of load | Number of starts per hour | Operation time per day | | | |
|----------------------|---------------------------|------------------------|-------|--------|---------|
| | | 2 | 2 – 8 | 8 – 12 | 12 – 24 |
| Uniform, smooth load | < 50 | 0.8 | 0.9 | 1.0 | 1.3 |
| | 50 - 500 | 0.9 | 1.1 | 1.2 | 1.5 |
| | 500 < | 1.0 | 1.2 | 1.4 | 1.7 |
| Moderate impact load | < 50 | 0.9 | 1.1 | 1.3 | 1.5 |
| | 50 - 500 | 1.1 | 1.3 | 1.5 | 1.8 |
| | 500 < | 1.3 | 1.5 | 1.7 | 2.0 |
| Heavy impact load | < 50 | 1.3 | 1.5 | 1.6 | 1.8 |
| | 50 - 500 | 1.5 | 1.7 | 1.9 | 2.1 |
| | 500 < | 1.7 | 2.0 | 2.1 | 2.4 |

TABLES OF EFFECT

Strength Factor

The strength factor is an expression of the durability of the gearing in relation to breakage. The breakage limit is three times the strength factor.

- By normal use, include the service factor on page 3 and choose a strength factor > 1.
- In case of special demands on safety or other special conditions, please contact a **MARLIN** Stainless product specialist.

| Motor | | Series 31 Output Torque Gearbox [Nm] / Strength Factor | | | | | | | | | | | |
|-------|---------|--|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| [rpm] | [kW] | Gear ratio n ₂ [rpm] | 5:1 180 rpm | 7:1 129 rpm | 10:1 90 rpm | 15:1 60 rpm | 20:1 45 rpm | 25:1 36 rpm | 30:1 30 rpm | 38:1 24 rpm | 50:1 18 rpm | 60:1 15 rpm | 75:1 12 rpm |
| 900 | 0.06 | | 2.6/4.6 | 3.6/3.5 | 4.6/2.6 | 6.6/2.1 | 8.1/1.6 | 8.8/1.5 | 10/1.3 | 12.6/1.2 | 12.7/0.9 | 13.8/0.8 | 15/0.6 |
| | 0.12 | | 5.2/2.3 | 7.1/1.7 | 9.3/1.3 | 13.2/1.0 | 16.3/0.8 | 18/0.8 | 20/0.6 | 25.2/0.6 | | | |
| | 0.18 2) | | 7.8/1.5 | 10.7/1.2 | 13.9/0.9 | 19.8/0.7 | | | | | | | |
| 1,400 | [rpm] | n ₂ [rpm] | 280 rpm | 200 rpm | 140 rpm | 93 rpm | 70 rpm | 56 rpm | 47 rpm | 37 rpm | 28 rpm | 23 rpm | 19 rpm |
| | 0.06 | | 1.7/6.6 | 2.3/5.0 | 3.1/3.7 | 4.4/2.9 | 5.4/2.3 | 5.8/2.1 | 6.8/1.8 | 8.4/1.6 | 8.6/1.2 | 9.3/1.0 | 10/0.9 |
| | 0.09 | | 2.5/4.4 | 3.5/3.3 | 4.6/2.5 | 6.5/1.9 | 8.1/1.5 | 8.7/1.4 | 10/1.2 | 12.6/1.1 | | | |
| | 0.12 | | 3.4/3.3 | 4.6/2.5 | 6.1/1.8 | 8.7/1.5 | 11/1.1 | 12/1.1 | 14/0.9 | | | | |
| 2,800 | 0.18 1) | | 5.1/2.2 | 7.0/1.7 | 9.2/1.2 | 13/1.0 | | | | | | | |
| | [rpm] | n ₂ [rpm] | 560 rpm | 400 rpm | 280 rpm | 187 rpm | 140 rpm | 112 rpm | 93 rpm | 74 rpm | 56 rpm | 47 rpm | 37 rpm |
| | 0.09 | | 1.3/8 | 1.8/5.8 | 2.4/4.3 | 3.4/3.3 | 4.2/2.6 | 4.7/2.4 | 5.4/2.0 | 6.6/1.8 | 7.1/1.4 | 7.7/1.1 | 8/0.9 |
| | 0.12 | | 1.7/6 | 2.4/4.3 | 3.2/3.2 | 4.5/2.5 | 5.6/1.9 | 6.2/1.8 | 7.2/1.5 | 8.9/1.4 | 9.4/1.0 | | |
| | 0.18 1) | | 2.6/4 | 3.6/2.9 | 4.7/2.1 | 6.8/1.7 | 8.5/1.3 | 9.4/1.2 | 10.9/1.0 | 13.3/0.9 | | | |
| | 0.25 1) | | 3.6/3 | 5.0/2.1 | 6.6/1.5 | 9.5/1.2 | 11.8/0.9 | 13/0.9 | | | | | |

| Motor | | Series 42 Output Torque Gearbox [Nm] / Strength Factor | | | | | | | | | | | |
|-------|------------|--|------------------|-----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|---------------|
| [rpm] | [kW] | Gear ratio n ₂ [rpm] | 5.4:1 130 rpm | 7.5:1 93 rpm | 10:1 70 rpm | 15:1 47 rpm | 20:1 35 rpm | 25:1 28 rpm | 30:1 23 rpm | 40:1 18 rpm | 50:1 14 rpm | 62:1 11 rpm | 75:1 9 rpm |
| 700 | 0.09 | | 5.3/8.5 | 7.1/6.7 | 9.1/6.7 | 12/7.0 | 16/3.7 | 20/9.2 | 21/6.5 | 24/3.7 | 29/2.4 | 32/1.6 | 38/1.0 |
| | 0.12 | | 7.2/6.4 | 9.7/5.0 | 12/5.1 | 17/5.0 | 21/2.9 | 27/7.0 | 28/5.0 | 33/2.8 | 39/1.8 | 44/1.2 | |
| | 0.18 2) | | 11/4.3 | 14/3.6 | 19/3.3 | 26/3.4 | 33/1.9 | 41/4.7 | 43/3.3 | 51/1.8 | | | |
| | 0.25 2) | | 15/3.2 | 20/2.5 | 26/2.5 | 37/2.4 | 46/1.3 | 57/3.4 | | | | | |
| | 0.37 3) | | 23/2.1 | 31/1.6 | 40/1.6 | 55/1.6 | | | | | | | |
| | 0.55 3) | | 34/1.4 | 46/1.1 | | | | | | | | | |
| 900 | [rpm] | n ₂ [rpm] | 167 rpm | 120 rpm | 90 rpm | 60 rpm | 45 rpm | 36 rpm | 30 rpm | 23 rpm | 18 rpm | 15 rpm | 12 rpm |
| | 0.09 | | | | | 12/7.7 | 12/4.6 | 15/11.4 | 16/8.1 | 20/4.4 | 23/2.9 | 26/1.9 | 30/1.2 |
| | 0.12 | | 5.6/7.5 | 7.6/5.9 | 9.7/5.9 | 13/6.0 | 17/3.3 | 21/8.3 | 23/5.7 | 28/3.2 | 32/2.1 | 36/1.4 | |
| | 0.18 1) | | 8.6/5.0 | 11/4.2 | 15/3.9 | 21/3.8 | 26/2.2 | 32/5.6 | 35/3.9 | 43/2.2 | 50/1.4 | | |
| | 0.25 1) | | 12/3.6 | 16/2.9 | 21/2.8 | 29/2.8 | 37/1.6 | 46/4.0 | 49/2.8 | | | | |
| | 0.37 2) | | 18/2.5 | 24/2.0 | 31/1.9 | 44/1.9 | | | | | | | |
| | 0.55 2) | | 27/1.7 | 37/1.3 | 47/1.3 | | | | | | | | |
| 1,400 | 0.75 3) | | 37/1.2 | | | | | | | | | | |
| | [rpm] | n ₂ [rpm] | 259 rpm | 187 rpm | 140 rpm | 93 rpm | 70 rpm | 56 rpm | 47 rpm | 35 rpm | 28 rpm | 23 rpm | 19 rpm |
| | 0.09 | | | | 4.6/10 | 6.5/10 | 8.3/5.6 | 10/14.2 | 11/9.9 | 14/5.5 | 15/3.6 | 17/2.5 | 20/1.6 |
| | 0.12 | | 3.5/9.6 | 4.7/7.7 | 6.2/7.6 | 8.8/7.5 | 11/4.2 | 14/10.5 | 15/7.5 | 18/4.2 | 21/2.8 | 24/1.8 | 28/1.2 |
| | 0.18 1) | | 5.5/6.4 | 7.4/5.1 | 9.7/5.0 | 13/5.3 | 17/2.9 | 21/7.2 | 23/5.1 | 28/2.8 | 33/1.8 | 37/1.2 | |
| | 0.25 1) | | 7.8/4.6 | 10/3.8 | 13/3.8 | 19/3.7 | 24/2.1 | 30/5.1 | 33/3.6 | 40/2.0 | | | |
| | 0.37 1) | | 11/3.3 | 15/2.6 | 20/2.5 | 29/2.4 | 37/1.4 | 45/3.5 | 49/2.4 | | | | |
| | 0.55 2) | | 17/2.2 | 23/1.7 | 31/1.6 | 43/1.6 | | | | | | | |
| 2,800 | 0.75 2) | | 24/1.5 | 32/1.2 | 42/1.2 | | | | | | | | |
| | [rpm] | n ₂ [rpm] | 519 rpm | 373 rpm | 280 rpm | 187 rpm | 140 rpm | 112 rpm | 93 rpm | 70 rpm | 56 rpm | 45 rpm | 37 rpm |
| | 0.18 1) | | 2.6/8.7 | 3.6/6.9 | 4.7/6.9 | 6.8/6.7 | 8.7/3.8 | 11/9.3 | 12/6.8 | 14/4.0 | 17/2.6 | 20/1.7 | 23/1.1 |
| | 0.25 1) | | 3.8/6.2 | 5.2/4.9 | 6.8/4.9 | 9.7/4.9 | 12/2.7 | 15/7.0 | 17/4.9 | 21/2.8 | 25/1.8 | 29/1.2 | |
| | 0.37 1) | | 5.9/4.1 | 8.0/3.3 | 10/3.4 | 14/3.5 | 19/1.8 | 23/4.8 | 26/3.3 | 32/1.8 | | | |
| | 0.55 1) | | 8.9/2.8 | 12/2.2 | 15/2.3 | 22/2.2 | 29/1.2 | 35/3.2 | | | | | |
| | 0.75 2) | | 12/2.1 | 16/1.7 | 21/1.7 | 31/1.6 | | | | | | | |
| | 1.10 2) | | 18/1.4 | 24/1.1 | 32/1.1 | | | | | | | | |
| | 1.50 1) 3) | | 25/1.0 | | | | | | | | | | |

These values apply to gearboxes which are well run in and properly heated for operation. 1) Available as stainless steel motor. 2) High output design. 3) Assembly through coupling.

TABLES OF EFFECT

| Motor | | Series 61 Output Torque Gearbox [Nm] / Strength Factor | | | | | | | | |
|---------|---------|--|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| [rpm] | [kW] | Gear ratio n ₂ [rpm] | 7:1 100 rpm | 10:1 70 rpm | 15:1 47 rpm | 21:1 33 rpm | 30:1 23 rpm | 40:1 17 rpm | 48:1 15 rpm | 60:1 11 rpm |
| 700 | 0.18 | | 13/17.5 | 19/9.0 | 27/8.9 | 35/17.3 | 47/8.8 | 56/5.0 | 64/3.3 | 70/2.2 |
| | 0.25 | | 19/12.9 | 27/6.5 | 39/6.2 | 50/12.3 | 67/6.2 | 82/3.5 | 90/2.4 | 99/1.6 |
| | 0.37 | | 29/8.7 | 41/4.3 | 58/4.3 | 75/8.3 | 101/4.2 | 123/2.4 | 136/1.6 | 149/1.1 |
| | 0.55 | | 44/5.8 | 62/2.9 | 88/2.8 | 112/5.6 | 152/2.8 | 185/1.6 | | |
| | 0.75 2) | | 61/4.2 | 85/2.1 | 121/2.1 | 154/4.1 | 208/2.1 | | | |
| | 1.10 3) | | 90/2.9 | 126/1.4 | 178/1.4 | | | | | |
| 1.50 3) | | 123/2.1 | 172/1.1 | | | | | | | |
| [rpm] | [kW] | n ₂ [rpm] | 129 rpm | 90 rpm | 60 rpm | 43 rpm | 30 rpm | 23 rpm | 19 rpm | 15 rpm |
| 900 | 0.25 1) | | 15/14.6 | 21/7.4 | 30/7.3 | 39/14.1 | 52/7.3 | 64/4.1 | 72/2.8 | 80/1.8 |
| | 0.37 1) | | 23/9.6 | 32/5.0 | 45/5.0 | 58/9.6 | 79/4.9 | 97/2.7 | 109/1.9 | 120/1.2 |
| | 0.55 1) | | 34/6.7 | 48/3.4 | 69/3.3 | 88/6.4 | 119/3.3 | 146/1.8 | | |
| | 0.75 1) | | 47/4.8 | 66/2.4 | 95/2.4 | 121/4.7 | 164/2.4 | | | |
| | 1.10 1) | | 70/3.3 | 98/1.7 | 140/1.6 | 179/3.2 | | | | |
| | 1.50 2) | | 96/2.4 | 134/1.2 | | | | | | |
| | 2.20 3) | | 141/1.6 | | | | | | | |
| [rpm] | [kW] | n ₂ [rpm] | 200 rpm | 140 rpm | 93 rpm | 67 rpm | 47 rpm | 35 rpm | 29 rpm | 23 rpm |
| 1,400 | 0.25 1) | | 9.6/17.8 | 13/9.5 | 19/9.4 | 25/17.4 | 33/9.2 | 41/5.1 | 47/3.6 | 53/2.3 |
| | 0.37 1) | | 14/12.5 | 20/6.3 | 29/6.3 | 38/11.8 | 51/6.2 | 62/3.5 | 72/2.4 | 80/1.5 |
| | 0.55 1) | | 22/8.1 | 31/4.2 | 45/4.1 | 57/8.0 | 77/4.1 | 94/2.3 | 109/1.6 | 122/1.0 |
| | 0.75 1) | | 30/6.0 | 42/3.1 | 62/3.0 | 79/5.8 | 106/3.0 | 129/1.7 | 151/1.2 | |
| | 1.10 1) | | 45/4.1 | 63/2.1 | 91/2.1 | 117/4.0 | 157/2.1 | | | |
| | 1.50 1) | | 62/3.0 | 86/1.5 | 125/1.5 | | | | | |
| | 2.20 2) | | 91/2.0 | 128/1.0 | | | | | | |
| [rpm] | [kW] | n ₂ [rpm] | 400 rpm | 280 rpm | 187 rpm | 133 rpm | 93 rpm | 70 rpm | 58 rpm | 47 rpm |
| 2,800 | 0.37 1) | | 7/15.1 | 10/8.1 | 14/8.3 | 18/15.2 | 25/8.3 | 32/4.5 | 37/3.2 | 43/2.0 |
| | 0.55 1) | | 11/10.0 | 15/5.5 | 22/5.4 | 28/10.1 | 39/5.5 | 49/3.0 | 57/2.1 | 65/1.4 |
| | 0.75 1) | | 15/7.5 | 21/4.0 | 30/4.0 | 39/7.4 | 55/3.9 | 68/2.2 | 80/1.5 | 91/1.0 |
| | 1.10 1) | | 22/5.2 | 32/2.7 | 45/2.7 | 58/5.1 | 82/2.7 | 102/1.5 | 119/1.1 | |
| | 1.50 1) | | 31/3.7 | 44/2.0 | 63/2.0 | 81/3.6 | 112/2.0 | | | |
| | 2.20 1) | | 46/2.5 | 65/1.4 | 93/1.3 | 119/2.5 | | | | |
| | 3.00 1) | | 63/1.8 | 89/1.0 | | | | | | |
| 4.00 3) | | 84/1.4 | | | | | | | | |

| Motor | | Series 79 Output Torque Gearbox [Nm] / Strength Factor | | | | | | | | |
|---------|---------|--|------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| [rpm] | [kW] | Gear ratio n ₂ [rpm] | 7.33:1 95 rpm | 10:1 70 rpm | 15:1 47 rpm | 21:1 33 rpm | 30:1 23 rpm | 42:1 17 rpm | 50:1 14 rpm | 62:1 11 rpm |
| 700 | 0.37 | | 31/16.4 | 43/8.5 | 59/8.5 | 79/4.2 | 104/8.3 | 136/4.2 | 153/3.0 | 171/1.9 |
| | 0.55 | | 47/11.0 | 65/5.7 | 90/5.6 | 120/2.8 | 157/5.6 | 205/2.8 | 230/2.0 | 258/1.3 |
| | 0.75 2) | | 65/8.0 | 89/4.2 | 124/4.1 | 165/2.1 | 216/4.1 | 282/2.1 | 316/1.5 | |
| | 1.10 3) | | 97/5.4 | 132/2.9 | 183/2.8 | 245/1.4 | | | | |
| | 1.50 3) | | 133/4.0 | 181/2.1 | 251/2.1 | | | | | |
| | 2.20 | | 196/2.7 | | | | | | | |
| [rpm] | [kW] | n ₂ [rpm] | 123 rpm | 90 rpm | 60 rpm | 43 rpm | 30 rpm | 21 rpm | 18 rpm | 15 rpm |
| 900 | 0.55 1) | | 36/12.7 | 48/6.6 | 69/6.5 | 94/3.3 | 123/6.4 | 166/3.3 | 183/2.3 | 214/1.5 |
| | 0.75 1) | | 50/9.3 | 67/4.8 | 96/4.7 | 130/2.4 | 169/4.7 | 228/2.4 | 252/1.7 | 294/1.1 |
| | 1.10 1) | | 75/6.3 | 99/3.3 | 142/3.2 | 192/1.6 | 250/3.2 | 337/1.6 | | |
| | 1.50 2) | | 103/4.6 | 136/2.4 | 195/2.4 | 263/1.2 | | | | |
| | 2.20 3) | | 152/3.1 | 200/1.6 | 287/1.6 | | | | | |
| | 3.00 3) | | 208/2.3 | | | | | | | |
| [rpm] | [kW] | n ₂ [rpm] | 191 rpm | 140 rpm | 93 rpm | 67 rpm | 47 rpm | 33 rpm | 28 rpm | 23 rpm |
| 1,400 | 0.75 1) | | 32/11.2 | 42/6.0 | 62/5.8 | 82/3.1 | 112/5.8 | 149/3.0 | 167/2.1 | 196/1.4 |
| | 1.10 1) | | 47/7.8 | 63/4.1 | 92/4.0 | 122/2.1 | 166/4.0 | 221/2.1 | 248/1.4 | 291/0.9 |
| | 1.50 1) | | 65/5.7 | 88/2.9 | 127/2.9 | 168/1.5 | 228/2.9 | | | |
| | 2.20 1) | | 96/3.8 | 130/2.0 | 188/2.0 | 248/1.0 | | | | |
| | 3.00 1) | | 133/2.8 | 178/1.5 | 258/1.5 | | | | | |
| 4.00 | | 178/2.1 | 238/1.1 | | | | | | | |
| [rpm] | [kW] | n ₂ [rpm] | 382 rpm | 280 rpm | 187 rpm | 133 rpm | 93 rpm | 67 rpm | 56 rpm | 45 rpm |
| 2,800 | 1.10 1) | | 23/9.6 | 31/5.2 | 46/5.0 | 63/2.7 | 63/5.0 | 114/2.7 | 134/1.9 | 153/1.2 |
| | 1.50 1) | | 32/7.1 | 44/3.7 | 64/3.7 | 87/2.0 | 117/3.6 | 158/2.0 | 185/1.4 | 212/0.9 |
| | 2.20 1) | | 48/4.8 | 64/2.5 | 95/2.5 | 129/1.3 | 173/2.5 | | | |
| | 3.00 1) | | 66/3.5 | 90/1.8 | 131/1.8 | 177/1.0 | | | | |
| | 4.00 3) | | 88/2.6 | 120/1.4 | 175/1.4 | | | | | |
| 5.00 3) | | 122/1.9 | 167/1.0 | | | | | | | |

These values apply to gearboxes which are well run in and properly heated for operation. 1) Available as stainless steel motor. 2) High output design. 3) Assembly through coupling.

TABLES OF EFFECT




| Motor | | Series 99 Output Torque Gearbox [Nm] / Strength Factor | | | | | | | | |
|-------|----------|--|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|
| [rpm] | [kW] | Gear ratio n ₂ [rpm] | 7:1 100 rpm | 10:1 70 rpm | 15:1 47 rpm | 20:1 35 rpm | 30:1 23 rpm | 40:1 18 rpm | 50:1 14 rpm | 60:1 11 rpm |
| 700 | 0.75 | | 61/8.8 | 86/7.5 | 124/3.7 | 159/4.1 | 218/7.3 | 271/4.1 | 319/2.6 | 359/1.8 |
| | 1.10 | | 91/5.9 | 128/5.0 | 183/5.0 | 236/2.8 | 323/5.0 | 401/2.8 | 472/1.8 | 531/1.2 |
| | 1.50 | | 125/4.4 | 175/3.7 | 251/3.7 | 323/2.1 | 442/3.6 | 549/2.0 | 647/1.3 | 724/0.9 |
| | 2.20 2) | | 185/3.0 | 258/2.5 | 370/2.5 | 474/1.4 | 652/2.5 | | | |
| | 3.00 2) | | 253/2.2 | 353/1.9 | 506/1.8 | 647/1.0 | 891/1.8 | | | |
| | 4.00 2) | | 338/1.6 | 472/1.4 | | | | | | |
| | 5.50 2) | | 465/1.2 | 650/1.0 | | | | | | |
| [rpm] | [kW] | n ₂ [rpm] | 129 rpm | 90 rpm | 60 rpm | 45 rpm | 30 rpm | 23 rpm | 18 rpm | 15 rpm |
| 900 | 0.75 1) | | 47/10.0 | 66/8.4 | 97/8.3 | 124/4.7 | 171/8.3 | 213/4.7 | 250/3.0 | 282/2.1 |
| | 1.10 1) | | 70/6.8 | 98/5.7 | 143/5.7 | 185/3.2 | 253/5.6 | 315/3.2 | 371/2.1 | 418/1.4 |
| | 1.50 1) | | 97/4.9 | 134/4.2 | 197/4.2 | 253/2.4 | 348/4.1 | 432/2.3 | 509/1.5 | 574/1.0 |
| | 2.20 1) | | 143/3.4 | 198/2.9 | 290/2.8 | 374/1.6 | 513/2.8 | 637/1.6 | | |
| | 3.00 | | 196/2.4 | 271/2.1 | 398/2.1 | 511/1.2 | 697/2.1 | 866/1.2 | | |
| | 4.00 2) | | 262/1.8 | 362/1.6 | 531/1.5 | | | | | |
| | 5.50 2) | | 361/1.3 | 500/1.2 | | | | | | |
| | 7.50 2) | | 494/1.0 | | | | | | | |
| [rpm] | [kW] | n ₂ [rpm] | 200 rpm | 140 rpm | 93 rpm | 70 rpm | 47 rpm | 35 rpm | 28 rpm | 23 rpm |
| 1,400 | 1.10 1) | | 45/8.0 | 63/6.9 | 92/6.8 | 119/3.8 | 165/6.8 | 212/3.9 | 247/2.5 | 284/1.7 |
| | 1.50 1) | | 62/5.8 | 87/5.0 | 127/5.0 | 164/2.8 | 228/4.9 | 292/2.8 | 340/1.8 | 390/1.3 |
| | 2.20 1) | | 91/4.0 | 126/3.5 | 188/3.4 | 242/1.9 | 337/3.4 | 431/1.9 | 502/1.2 | |
| | 3.00 1) | | 125/2.9 | 177/2.5 | 257/2.5 | 331/1.4 | 461/2.5 | 591/1.4 | | |
| | 4.00 1) | | 168/2.2 | 238/1.9 | 345/1.9 | 443/1.1 | | | | |
| | 5.50 2) | | 232/1.6 | 328/1.4 | 475/1.3 | | | | | |
| | 7.50 2) | | 317/1.2 | 448/1.0 | | | | | | |
| [rpm] | [kW] | n ₂ [rpm] | 400 rpm | 280 rpm | 187 rpm | 140 rpm | 93 rpm | 70 rpm | 56 rpm | 47 rpm |
| 2,800 | 1.50 1) | | 30/7.1 | 42/6.2 | 63/6.0 | 81/3.5 | 112/6.0 | 149/3.5 | 174/2.2 | 201/1.6 |
| | 2.20 1) | | 45/4.8 | 63/4.2 | 93/4.1 | 121/2.4 | 166/4.1 | 222/2.4 | 259/1.5 | 298/1.1 |
| | 3.00 1) | | 62/3.5 | 87/3.0 | 127/3.0 | 166/1.7 | 228/3.0 | 305/1.7 | 356/1.1 | |
| | 4.00 1) | | 83/2.6 | 116/2.3 | 171/2.3 | 223/1.3 | 306/2.3 | 409/1.3 | | |
| | 5.50 | | 115/1.9 | 161/1.7 | 236/1.7 | 308/0.9 | 423/1.6 | | | |
| | 7.50 | | 158/1.4 | 220/1.2 | 323/1.2 | | | | | |
| | 11.00 2) | | 232/1.0 | | | | | | | |

These values apply to gearboxes which are well run in and properly heated for operation. 1) Available as stainless steel motor. 2) High output design. 3) Assembly through coupling.






MOUNTING OF GEAR

1 42 4 0 411 12 02 01 30 0 1

| | Housing Mounting in Gear Housing | Housing Mounting in Side Flange |
|--|---|---|
| Stainless housing series 31, 42 and 61 |  |  |
| Stainless housing series 79 and 99 |  | |
| Standard | 40 | 41 |

CHOICE OF OUTPUT SHAFT

1 42 4 0 41 1 12 02 01 30 0 1

| | Extra mounting holes RHS | Extra mounting holes LHS | Without extra mounting holes |
|---------------------------------|---|--|---|
| Hollow Shaft |  |  |  |
| Standard, Stainless Steel Shaft | 4 (*6 for Ø38) | 5 (*7 for Ø38) | 0 (*8 for Ø38) |

| | Series 31 | Series 42 | Series 61 | Series 79 | Series 99 |
|-------------|-----------------------------|--|--|---|--|
| Shaft Sizes | Ø14 = 0 Standard Ø14 | Ø18 = 7 Ø20 = 1 Standard Ø20 | Ø25 = 3 Ø30 = 4 Standard Ø25 | Ø30 = 4 Ø35 = 5 Ø38 = 5* Ø40 = 8 Standard Ø35 | Ø35 = 5 Ø38 = 5* Ø40 = 8 Ø45 = 9 Ø48 = 6 Standard Ø48 |

*Ø38 is 65 for hollow shaft with mounting holes RHS, 75 is for hollow shaft with mounting holes LHS and 85 is for hollow shaft with no extra mounting holes.

Other shaft sizes on request, please contact a **MARLIN** Stainless product specialist.





CHOICE OF OUTPUT SHAFT

1 42 4 0 41 1 12 02 01 30 0 1

| | | |
|---|---|-------------------------------------|
| Standard, Stainless Steel Shaft | 1 | |
| Stainless Steel Shaft, Tap. Roller Bearings | 3 | Only available for series 79 and 99 |

D-SIDE AND WORM

1 42 4 0 411 12 02 01 30 0 1

| | Motor Flange and Hollow Worm at D-side | Free Worm Shaft at D-side |
|---|---|---|
| ND-side closed |  |  |
| Standard | 1202 | 3040 |
| Hollow input Worm Shaft with Solid Shaft on ND-side |  |  |
| Standard | 1X2X | 3050 |

X To be replaced by digits No. 1 - 9 of below table.

Customised solution:

The motor flange can be adapted to all motors. It is possible to mount couplings etc. between the motor and gearbox.
The worm shaft can be manufactured in customised diameters and lengths.

This table indicates sizes of motor flanges, coupling housings and hollow worm shafts:

| X to be replaced by | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|--|----------------|----------------|-----------------|-----------------|--------------------|-------------------|---------|---|---|
| Series 31 Motor flange Hollow worm | DCD 75 Ø 11 | DCD 85 Ø 14 | DCD 100 | DCD 115 | DCD 130 | | | | |
| Series 42 Motor flange Hollow worm | DCD 75 Ø 11 | DCD 85 Ø 14 | DCD 100 | DCD 115 | DCD 130 | | | | |
| Series 61 Motor flange Hollow worm | DCD 75 | DCD 85 Ø 14 | DCD 100 Ø 19 | DCD 115 Ø 24 | DCD 130 | DCD 165 | | | |
| Series 79 Motor flange Hollow worm | | | DCD 100 Ø 19 | DCD 115 Ø 24 | DCD 130 Ø 28 | DCD 165 | DCD 215 | | |
| Series 99 Motor flange Hollow worm | | | | DCD 115 Ø 24 | DCD 130 Ø 28 | DCD 165 Ø 38 | DCD 215 | | |
| Standard Motors | Size 63 | Size 71 | Size 80 | Size 90 | Size 100/112 | Size 132 | | | |
| Motor Power [kW] for 700 min ⁻¹ | 0.06 | 0.09 0.12 | 0.18 0.25 | 0.37 0.55 | 0.75 1.1 1.5 | 2.2 3.0 | | | |
| Motor Power [kW] for 900 min ⁻¹ | 0.12 | 0.18 0.25 | 0.37 0.55 | 0.75 1.1 | 1.5 2.2 | 3.0 4.0 5.5 | | | |
| Motor Power [kW] for 1400 min ⁻¹ | 0.12 0.18 | 0.25 0.37 | 0.55 0.75 | 1.1 1.5 | 2.2 3.0 4.0 | 5.5 7.5 | | | |
| Motor Power [kW] for 2800 min ⁻¹ | 0.18 0.25 | 0.37 0.55 | 0.75 1.1 | 1.5 2.2 | 3.0 4.0 5.5 | 5.5 7.5 | | | |

DCD correspond to FT and FF motor flange sizes.

NB – Max input shaft dimensions as follows: 42 Box – 14mm.

CHOICE OF ND-SIDE

1 42 4 0 411 12 02 01 30 0 1

| | |
|----|--|
| 01 | Closed End Cover, Standard , available for Worm without Solid Shaft on ND-side |
| 11 | Closed End Cover in Stainless Steel, Heavy Duty , available for Worm without Solid Shaft on ND-side |
| 30 | Open End Cover , for Worm with Solid Shaft on ND-side |

CHOICE OF LUBRICANTS

1 42 4 0 411 12 02 01 30 0 1

| | Description | Application | Viscosity | Lubricant |
|---|--|--|-----------|------------------------|
| 0 | Fully synthetic gear oil, standard | Normal load and ambient temp. -25°C to +40°C | 220 | Klübersynth GH 6-220 |
| 1 | Fully synthetic gear oil | Heavy load and ambient temp. -20°C to > +40°C | 460 | Klübersynth GH 6-460 |
| 2 | Fully synthetic gear oil | Heavy load and ambient temp. -20°C to > +40°C | 680 | Klübersynth GH 6-680 |
| 3 | Liquid grease | Normal load and ambient temp. -40°C to > +40°C | 1200 | Klübersynth GE 46-1200 |
| 4 | Special lubricating oil for food and pharmaceutical industries | Normal load and ambient temp. -20°C to +40°C | 460 | Klüberoil 4 UH1-460 N |

Ambient temperatures are guide values which depend on the lubricant's composition, the intended use and the application method. All data is based on synthetic oils. Do not mix synthetic oils with mineral oils.

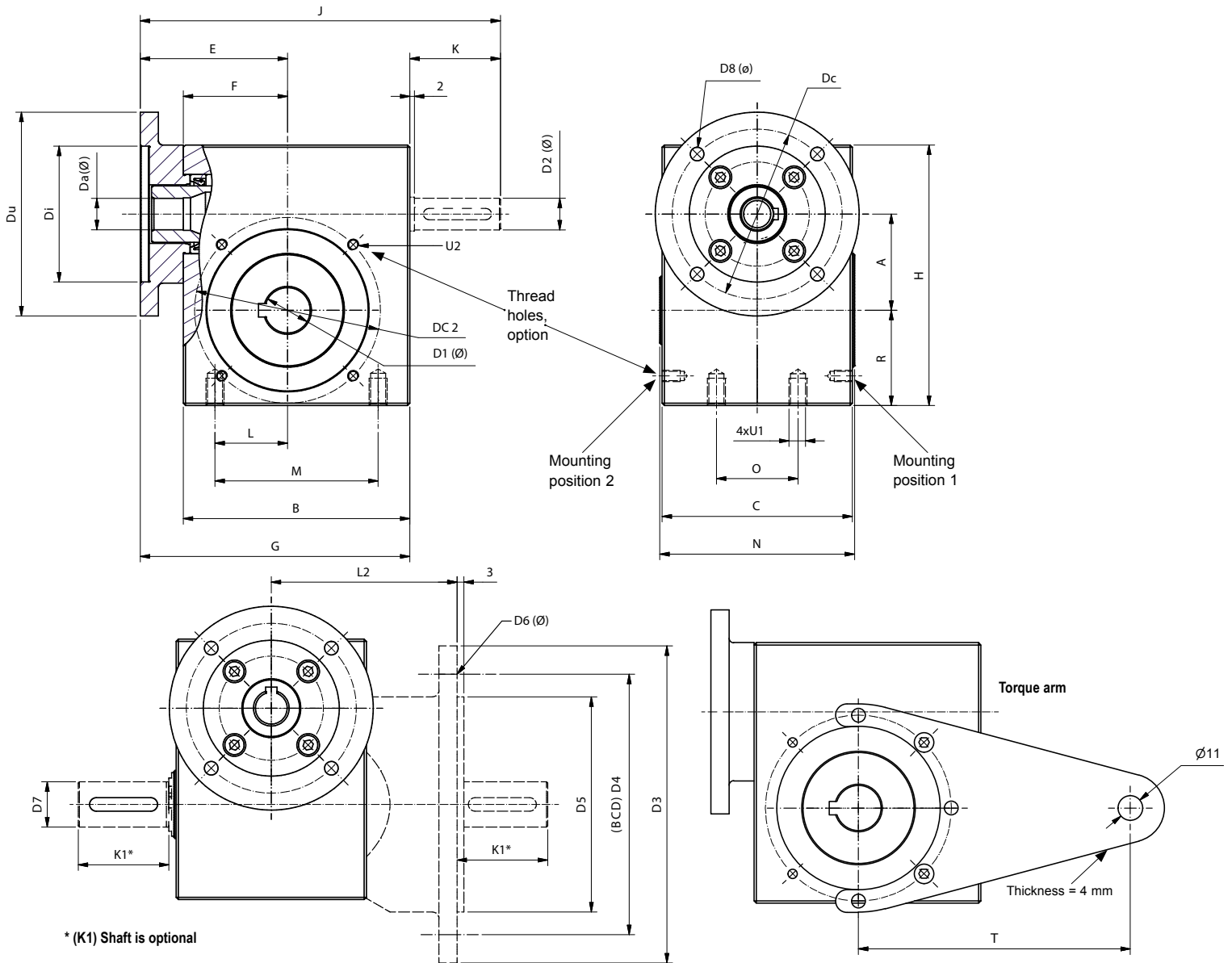
CHOICE OF FINISH

1 42 4 0 411 12 02 01 30 0 1

| | |
|---|--|
| 1 | No treatment (Standard for stainless steel gearboxes) |
|---|--|



DIMENSIONAL DRAWINGS SERIES 31, 42 AND 61



*(K1) Shaft is optional

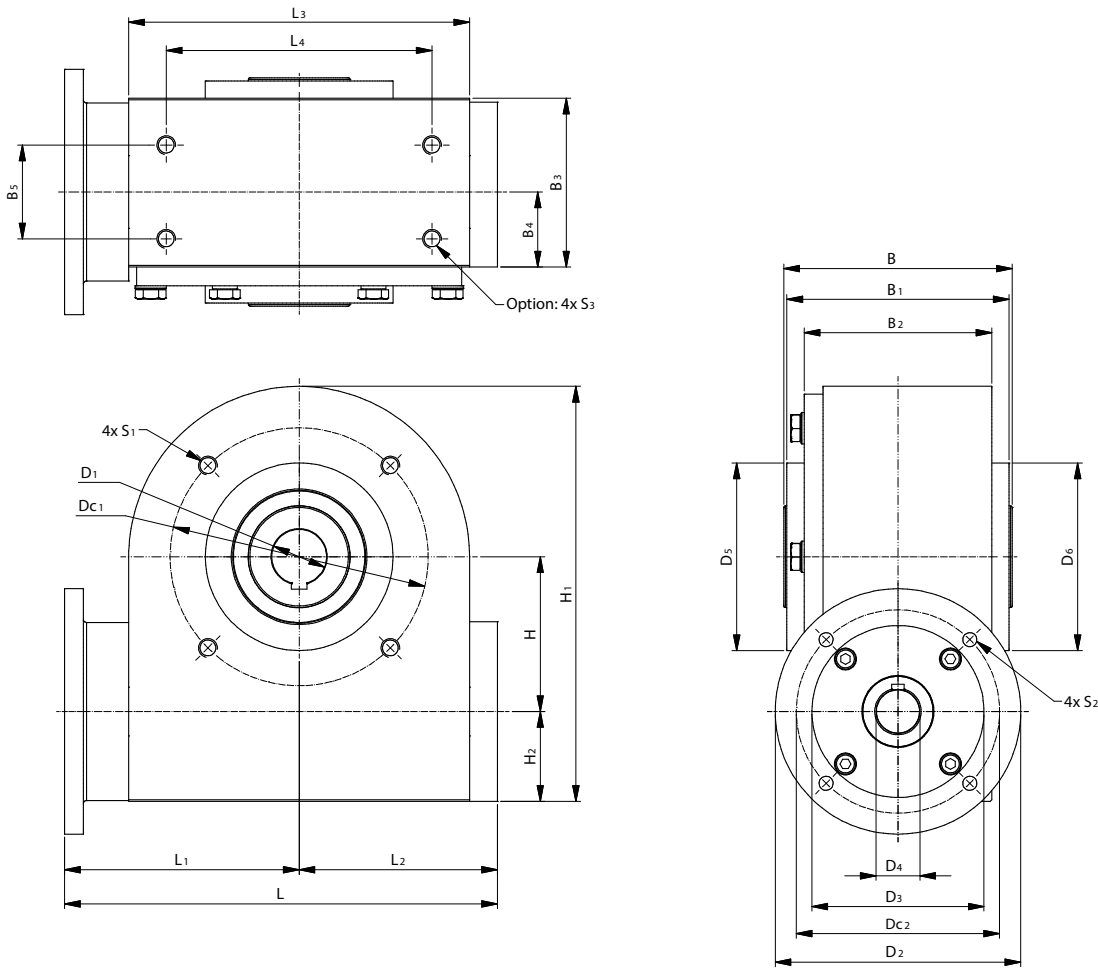
For information about covers please contact a **MARLIN** Stainless product specialist.

| Gear series | A | B | C | D1 (H8) | D2 (k6) | D3 | D4 | D5 | D6 | D7 (k6) | F | H | K | K1 | L | L2 | M | N | O | R | T | U1 | U2 | X | Y | Motor size | Flange size | Du | Di (F6) | Da (G7) | Dc | Dc2 | D8 | E | G | J | Weight kg approx. |
|-------------|------|-----|-----|---------|---------|-----|-----|-----|----|---------|----|-----|----|----|----|-----|-----|-----|----|------|-----|-----|----|----|-----|------------|-------------|-----|---------|---------|-----|-----|----|-----|-----|-----|-------------------|
| 31 | 31 | 79 | 60 | 14 | 9 | 115 | 100 | 80 | 7 | 14 | 34 | 88 | 22 | 30 | 28 | 59 | 60 | 62 | 40 | 33.5 | 100 | M6 | M4 | 8 | 65 | 56 | 65 | 80 | 50 | 9 | 65 | 63 | 6 | 51 | 96 | 118 | 3 |
| | | | | | | | | | | | | | | | | | | | | | | | | | | 63 | 75 | 90 | 60 | 11 | 75 | 63 | 6 | 51 | | | |
| 42 | 42.5 | 100 | 84 | 20 | 14 | 140 | 115 | 95 | 9 | 20 | 46 | 115 | 40 | 40 | 32 | 82 | 72 | 86 | 36 | 42 | 120 | M8 | M5 | 10 | 86 | 63 | 75 | 90 | 60 | 11 | 75 | 82 | 6 | 65 | 119 | 159 | 6 |
| | | | | | | | | | | | | | | | | | | | | | | | | | | 71 | 85 | 105 | 70 | 14 | 85 | 82 | 7 | 65 | | | |
| 61 | 61 | 135 | 108 | 25/30 | 19 | 200 | 165 | 130 | 11 | 30 | 56 | 153 | 42 | 60 | 41 | 104 | 106 | 110 | 42 | 56 | 160 | M10 | M6 | 13 | 110 | 71 | 85 | 105 | 70 | 14 | 85 | 114 | 7 | 91 | 170 | 212 | 14 |
| | | | | | | | | | | | | | | | | | | | | | | | | | | 80 | 100 | 120 | 80 | 19 | 100 | 114 | 9 | 91 | 170 | 212 | |
| | | | | | | | | | | | | | | | | | | | | | | | | | | 90 | 115 | 140 | 95 | 24 | 115 | 114 | 9 | 101 | 180 | 222 | |

Key and keyway according to DIN 6885 except size 31: Key equal 5 x 4.3 mm

All measurements in millimeters

DIMENSIONAL DRAWINGS SERIES 79 AND 99



Optional Covers for Output Shafts

For information about covers please contact a **MARLIN** Stainless product specialist.

| Gear series | Flange size | Motor size | L | L ₁ | L ₂ | L ₃ | L ₄ | B | B ₁ | B ₂ | B ₃ | B ₄ | B ₅ | H | H ₁ | H ₂ |
|-------------|-------------|------------|-----|----------------|----------------|----------------|----------------|-----|----------------|----------------|----------------|----------------|----------------|----|----------------|----------------|
| 79 | 100 | 80 | 215 | 118 | 97 | 172 | 135 | 110 | 106 | 92 | 81 | 35 | 48 | 79 | 206 | 41 |
| | 115 | 90 | 215 | 118 | | | | | | | | | | | | |
| | 130 | 100/112 | 223 | 126 | | | | | | | | | | | | |
| 99 | 115 | 90 | 277 | 150 | 127 | 218 | 170 | 146 | 142 | 120 | 108 | 48 | 60 | 99 | 265.5 | 57.5 |
| | 130 | 100/112 | | | | | | | | | | | | | | |

Key and keyway according to DIN 6885 All measurements in millimeters

| Gear series | Flange size | Motor size | D ₁ (H8) | D ₂ | D ₃ (F6) | D ₄ (G7) | D ₅ | D ₆ (h6) | D _{c1} (h6) | D _{c2} | S ₁ | S ₂ | S ₃ | Weight kg approx. |
|-------------|-------------|------------|---------------------|----------------|---------------------|---------------------|----------------|---------------------|----------------------|-----------------|----------------|----------------|----------------|-------------------|
| 79 | 100 | 80 | Ø35 | Ø120 | Ø80 | Ø19 | Ø50 | Ø105 | Ø125 | Ø100 | M10x12 | Ø7 | M12x18 | 21 |
| | 115 | 90 | | Ø140 | Ø95 | Ø24 | Ø50 | Ø105 | Ø125 | Ø115 | M10x12 | Ø9 | M12x18 | |
| | 130 | 100/112 | | Ø160 | Ø110 | Ø28 | Ø50 | Ø105 | Ø125 | Ø130 | M10x12 | Ø9 | M12x18 | |
| 99 | 115 | 90 | * | Ø140 | Ø95 | Ø24 | Ø120 | Ø120 | Ø165 | Ø115 | M12x20 | Ø9 | M12x20 | 37 |
| | 130 | 100/112 | | Ø157 | Ø110 | Ø28 | Ø120 | Ø120 | Ø165 | Ø130 | M12x20 | Ø9 | M12x20 | |

Key and keyway according to DIN 6885

* Hollow shaft D1 available in Ø35, Ø40, Ø45 and Ø48 mm with tolerance H8 for series 99.

STAINLESS STEEL HELICAL BEVEL GEARS

WHERE HYGIENE, HIGH-TORQUE & EFFICIENCY COUNT

Our European-manufactured **MARLIN** Stainless steel helical bevel gearboxes feature bevel gears with helical teeth. They provide a high power to size ratio resulting in high torques with exceptional efficiencies. Their high torsional stiffness and low backlash lead to repeatable, precise positioning at high-torque rates. This design has excellent efficiency figures, giving very low running costs.

For certain applications, the helical design is a must-have choice because it results in extremely compact units, producing less vibration and noise than conventional straight-cut, or spur-cut gears with straight teeth. In addition, the uniform design of the gearboxes

makes them ideal for multi-stacking or double-ratio (back to back), achieving very low output speeds and high torques.

The stainless steel helical bevel gears are supplied as standard with a hollow output shaft and motor flange. Having been specifically designed for the Food and Pharmaceutical industries, when supplied with a **MARLIN** Stainless Motor as a complete stainless unit, their sleek lines are ideal for Clean in Place (CIP) washdown applications and harsh environments.

In addition to our standard range, special shafts and flanges are also available upon request.

FEATURES:

Easy and simple to fit

Compact and modular design

Hygienic design with smooth surfaces

Flanges are to IEC dimensions

The protection of the gearbox is IP65

Sturdy and reliable

Low noise

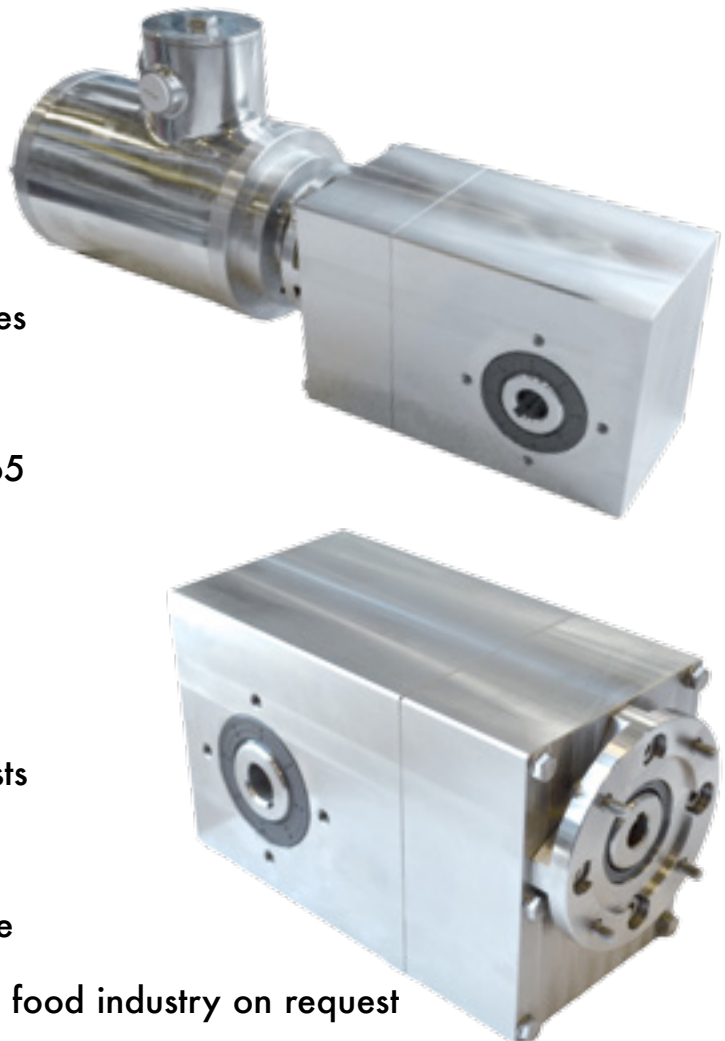
High efficiency

High Quality - Reduced lifecycle costs

Stainless motors available

Wide range of accessories available

Lubrication grease approved by the food industry on request





TECHNICAL SPECIFICATIONS

| Series | Ratios | Max. output torque [Nm] | Housing design |
|---------------------------|---------------|-------------------------|--|
| Series SS 22 (2-steps) | 4.83 - 70.24 | 50 | Stainless steel housing with hollow output shaft Ø20 as standard. (Ø18 on request) |
| Series SS 32 (2-steps) | 7.33 - 77.55 | 90 | Stainless steel housing with hollow output shaft Ø20 as standard. (Ø25 on request) |
| Series SS 33 (3-steps) | 7.33 - 324.18 | 100 | |
| Series SS 42 (2-steps) | 7.29 - 77.36 | 150 | Stainless steel housing with hollow output shaft Ø25 as standard. (Ø30 on request) |
| Series SS 43 (3-steps) | 7.29 - 323.37 | 160 | |

The stainless steel helical bevel gearboxes feature high power to size ratios and efficiencies of up to 96%.

They are available as standard with hollow output shaft and motor input flange.

All gearboxes within this catalogue are supplied for use with metric/IEC motors.

Various output flanges and torque arms are available on request.

Please visit our website www.marlinstainless.com where you will find further information on our complete product range. Please contact our specialists in order to find the right solution for your application.

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